

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer implemented system that facilitates classifying messages in connection with spam prevention, comprising:
 - a component that receives a set of the messages;
 - a first classification component that identifies a subset of the messages as SPAM or flagged for further analysis, and temporarily delays further classification of the subset of messages; and
 - a second classification component that after a ~~determined~~ delay period classifies the subset of messages by employing a filter that is updated during the delay period based at least in part on one or more learning techniques that are employed to receive additional data associated with the subset of messages during the determined delay period, the additional data includes data based on an analysis of the subset of messages, the delay period is dynamically determined based in part on at least one of a probability that the set of messages are spam, a time of next filter update, a time of next filter download or a level of uncertainty, the determined delay period is reduced when determined that the subset of messages have been quarantined by one or more server filters,
wherein a memory operatively coupled to a processor retains at least one of the component, the first classification component or the second classification component.
2. (Original) The system of claim 1, the second classification component identifying some of the subset of messages as good based on a lack of sufficient new negative information.
3. (Original) The system of claim 1, the second classification component identifying some of the subset of messages as good based on new positive information other than a close match to a good message.

4. (Original) The system of claim 1, the messages are classified as spam or flagged or delayed based on a lack of information.
5. (Original) The system of claim 1, the messages are reclassified based on updated information from a machine learning spam filter.
6. (Original) The system of claim 2, wherein the lack of sufficient new negative information comprises the lack of appearance of similar messages in honeypots.
7. (Original) The system of claim 2, wherein the lack of sufficient new negative information comprises a lack of user complaints on similar information.
8. (Original) The system of claim 2, the lack of sufficient new negative information comprises information from polling users about at least a subset of messages.
9. (Original) The system of claim 2, the lack of sufficient new negative information comprises a low volume of similar messages.
10. (Original) The system of claim 8, the messages are classified as similar based on the sender's identity.
11. (Original) The system of claim 10, the sender's identity is classified based on his IP address.
12. (Original) The system of claim 8, the similarity of messages is based on the URLs contained in the messages.
13. (Original) The system of claim 1, messages initially classified as spam are deleted based on new information.
14. (Original) The system of claim 1, the spam is permanently deleted.

15. (Original) The system of claim 1, the spam is moved to a deleted messages folder.

16. (Original) The system of claim 1, further comprising a feedback component that receives information relating to the first and/or second classification component(s)', and employs the information in connection with training a spam filter or populating a spam list.

17. (Original) The system of claim 1, wherein the messages comprise at least one of: electronic mail (e-mail) and messages.

18. (Original) The system of claim 1, wherein the component that receives a set of the messages is any one of an e-mail server, a message server, and client e-mail software.

19. (Currently Amended) A server employing the system of claim 1 that facilitates classifying messages in connection with spam prevention, comprising:

a component that receives a set of the messages;

a first classification component that identifies a subset of the messages as SPAM or flagged for further analysis, and temporarily delays further classification of the subset of messages; and

a second classification component that after a delay period classifies the subset of messages by employing a filter that is updated during the delay period based at least in part on one or more learning techniques that are employed to receive additional data associated with the subset of messages during the determined delay period, the additional data includes data based on an analysis of the subset of messages, the delay period is dynamically determined based in part on at least one of a probability that the set of messages are spam, a time of next filter update, a time of next filter download or a level of uncertainty, the determined delay period is reduced when determined that the subset of messages have been quarantined by one or more server filters,

wherein a memory operatively coupled to a processor retains at least one of the component, the first classification component or the second classification component.

20. (Currently Amended) An e-mail architecture employing the system of claim 1 that facilitates classifying messages in connection with spam prevention, comprising:

_____ a component that receives a set of the messages;

_____ a first classification component that identifies a subset of the messages as SPAM or flagged for further analysis, and temporarily delays further classification of the subset of messages; and

_____ a second classification component that after a delay period classifies the subset of messages by employing a filter that is updated during the delay period based at least in part on one or more learning techniques that are employed to receive additional data associated with the subset of messages during the determined delay period, the additional data includes data based on an analysis of the subset of messages, the delay period is dynamically determined based in part on at least one of a probability that the set of messages are spam, a time of next filter update, a time of next filter download or a level of uncertainty, the determined delay period is reduced when determined that the subset of messages have been quarantined by one or more server filters,

_____ wherein a memory operatively coupled to a processor retains at least one of the component, the first classification component or the second classification component.

21. (Currently Amended) A computer readable storage medium having stored thereon the components of claim 1 that facilitates classifying messages in connection with spam prevention, comprising:

_____ a component that receives a set of the messages;

_____ a first classification component that identifies a subset of the messages as SPAM or flagged for further analysis, and temporarily delays further classification of the subset of messages; and

_____ a second classification component that after a delay period classifies the subset of messages by employing a filter that is updated during the delay period based at least in part on one or more learning techniques that are employed to receive additional data associated with the subset of messages during the determined delay period, the additional data includes data based on an analysis of the subset of messages, the delay period is dynamically determined based in part on at least one of a probability that the set of messages are spam, a time of next filter update,

a time of next filter download or a level of uncertainty, the determined delay period is reduced when determined that the subset of messages have been quarantined by one or more server filters.

22. (Original) The system of claim 1, further comprising a quarantine component that quarantines the subset of messages based at least in part upon identification as flagged for further analysis by the first classification component.

23. (Original) The system of claim 1, the quarantining effected via placing the subset of messages in a folder separate from other messages.

24. (Original) The system of claim 1, the folder is visible or invisible to a user.

25. (Original) The system of claim 1, further comprising an identification component that identifies a source associated with a high occurrence of the subset of messages.

26. (Currently Amended) The system of claim 1, further comprising a time-stamp component that stamps ~~at least one of~~ an original arrival date on [[the]] a message and a release date when the message is classified as good by the second classification component, the message sorted by ~~the release date classification of the message resumes.~~

27. (Original) The system of claim 1, the subset of messages excludes at least one of messages from senders on safelists, messages readily identified and classified as spam, messages readily identified and classified as good.

28. (Original) The system of 1, the first classification component determines length of delay before classification of the subset of messages is performed.

29. (Original) The system of claim 28, the length of delay is based at least in part upon at least one of the following:

amount of time until a next scheduled filter update;

amount of time until download of new or updated filter; and
spam probability score assigned to respective messages in the subset.

30. (Currently Amended) A method for classifying messages, comprising:
receiving a set of messages to classify; based on lack of sufficient information,
temporarily delaying classification on at least a subset of the messages as either spam or good or
initially classifying the subset of messages as untrustworthy or suspicious;
dynamically determining a delay time period based at least in part upon at least one of a
probability that the message is spam, a time of next filter update, a time of next filter download
or a level of uncertainty associated with the subset of the messages; and
classifying the untrustworthy or suspicious subset of messages as spam or good after the
determined delay period by employing a client filter that is updated during the delay period
based at least in part on one or more learning techniques that are employed during the
determined delay period to receive additional data associated with the subset of messages, the
one or more learning techniques include at least one of monitoring the subset of the messages
with respect to at least one of volume per sender or similarities among quarantined messages, or
analyzing the subset of the messages for at least one of their content or origination information;
and
reducing the delay time period associated with the client filter for a message when
determined that one or more server filters have quarantined a message for a time period.

31. (Original) The method of claim 30, further comprising a machine learning filter trained
to determine the likelihood of quarantining aiding a correct eventual classification.

32. (Original) The method of claim 30, further comprising resuming classification when at
least one of the following occurs:
a quarantine period elapses; and
additional information about the subset of messages has been obtained to facilitate
classification of the respective messages in the subset as either spam or good.

33. (Original) The method of claim 30, the subset of messages excluding messages that is readily classified as spam or good or is from senders on a safelist.

34. (Original) The method of claim 30, temporarily delaying classification of the message when based at least in part upon at least one of the following:

- sender's IP address on the message has not been seen before;
- sender's domain has not been seen before;
- sender's domain lacks a reverse IP address;
- a forward lookup on the sender's domain does not at least approximately match the sender's IP address;
- the message comprises at least one of an embedded domain name, an embedded macro, and an executable file;
- the message comprises conflicting evidence of good and spam messages;
- the message originates from a location associated with spam;
- the message is written in a language associated with spam;
- the message comprises primarily an image; and
- the message comprises HTML.

35. (Previously Presented) The method of claim 30, further comprising delivering at least a subset of suspicious messages.

36. (Original) The method of claim 35, the subset of suspicious messages is delivered to their respective intended recipients and their actions facilitate determining whether the subset of messages is spam or good.

37. (Original) The method of claim 35, the subset of messages for which feedback is sought is a fixed percentage of messages or a fixed quantity of messages per sender that are temporarily delayed from classification.

38. (Original) The method of claim 35, the subset of messages for which feedback is sought is allowed to get through without classification as either spam or good to facilitate learning more about the messages.

39. (Currently Amended) A computer executable API stored on a computer readable storage medium that facilitates classifying messages by quarantining, comprising:

calculating a spam probability score for incoming messages;

quarantining at least a subset of messages based at least in part upon their respective spam probability scores; and

dynamically recommending a quarantine time based in part on at least one of a probability that the set of messages are spam, a time of next filter update, a time of next filter download or a level of uncertainty ;

updating one or more spam filters during the quarantine time the quarantined subset of messages classified as good or spam after the quarantine time based at least in part on one or more learning techniques that are employed during the quarantine time to receive additional data associated with the subset of messages;

classifying the quarantined subset of messages as good or spam after the quarantine time by employing the one of more updated spam filters; and

communicating between server and client that one or more server filters have quarantined a message for a time period so that the one or more client filters reduce quarantine time for the message.

40. (Original) The API of claim 39, further comprising quarantining at least a subset of messages until the next filter download, at which time the filter determines whether to continue quarantining or resume classification of the messages; and repeating until a final classification of either spam or good is made.

41. (Cancelled)

42. (Currently Amended) A computer implemented system for classifying messages, comprising:

means for receiving a set of messages to classify;

means for based on lack of sufficient information, temporarily delaying classification on the message as either spam or good or initially classifying the message as untrustworthy or suspicious; and

means for dynamically determining a delay period based in part on at least one of a probability that the set of messages are spam, a time of next filter update, a time of next filter download or a level of uncertainty;

[[a]] means for classifying the untrustworthy or suspicious subset of messages as spam or good after [[a]] the determined delay period based at least in part on one or more learning techniques employed during the determined delay period to receive additional data associated with the subset of messages, the additional data includes message volume;

means for creating a sub-filter by employing training data generated by user and system analysis, the sub-filter is trained on one or more features extracted from the untrustworthy or suspicious messages;

means for applying the sub-filter to the untrustworthy or suspicious messages to classify the untrustworthy or suspicious messages as good or spam;

means for communicating between server and client to determine messages that are quarantined by one or more server filters for a time period; and

means for reducing the determined delay period for the determined message wherein a memory operatively coupled to a processor retains at least one of the means.